

REMARKS

The Examiner's final Office Action dated March 14, 2003 and Advisory Action of January 23, 2004 have been received and their contents carefully noted. Applicants respectfully submit that this response is timely filed (with a Petition for Extension of Time for four months from the Notice of Appeal filed September 15, 2003) and is fully responsive.

The Examiner's agreement, in the Advisory Action, to enter the Amendment of July 14, 2003 is greatly appreciated and the Applicants have taken note of the Examiner's statement therein that the teachings of Hodate are interpreted to meet claimed limitation "which only overlap the pair of first impurity regions" when the side walls of Hodate are viewed as being part of the gate structure which are shown to overlap impurity regions (Figure 3B. elements 11).

By the above amendments, claims 32, 38, 44 and 50 are amended. Support for the amendments can be found at least at Figures 4C-4D and at page 30, lines 22-26. Accordingly, claims 1-14, 31 and 32-55 remain pending with claims 1-14 and 31 being withdrawn as being directed to a non-elected specie which, upon finding generic claims 32-55 allowable, would be subject to consideration by the Examiner. Claims 32-55 are believed to be in condition for allowance for at least the reasons set forth below.

With regard to the Examiner's rejections of:

- A. Claims 32-36, 38-41, 44-48 and 50-54, under 35 U.S.C. 102(b), as being anticipated by the teachings of Hodate et al ('940),
- B. Claims 37, 43, 49 and 55, under 35 U.S.C. 103(a), as being obvious in view of the combined teachings of Hodate et al ('940) and Shanks et al ('688), and
- C. Claims 32, 35-38, 41-44, 47-50 and 53-59, under the judicially created doctrine of obviousness-type double patenting, as being obvious in view of claims 1, 7, 8, 9, 15, 17, 19, 23, 25, 27, 37, 42, 44, 46, 57, 64 and 66, of U.S. Patent No. 6,274,887,

the Applicants continue to respectfully traverse each of these rejections.

With regard to the rejections A. (under §102(b)) and B. (under §103(a)) above, the Applicants repeat the arguments set forth in the Amendment of July 14, 2003 in which it is urged that the Hodate et al reference neither discloses each and every feature of the claimed invention, nor suggests modifying the teachings of Hodate to achieve the semiconductor device structure presently claimed. To those arguments, the Applicants add that the presently claimed invention, of independent claims 32, 38, 44 and 50, requires that the semiconductor device have an insulating film on the gate electrode and the pair of (conductive) side walls of the gate such that the insulating film wall overlays only the first conductivity region, as disclosed in the instant specification, e.g. Figures 4C and 4D.

A review of the Hodate et al and Shanks et al. references reveals that neither reference teaches or suggests this feature. Note particularly that Hodate et al teach that, when forming three adjacent impurity regions adjacent the channel region, the sidewalls composed of an insulating resist mask (Figure 4B, 4C, elements 19a, 19b) are disposed not only on the first impurity region but also over the second impurity region. Therefore, the above highlighted claim feature is not taught by Hodate et al who instead teach that the insulating film (Figure 3C, element 14; Figure 4C, element 19, Figure 8C, element 51; Figure 9C, element 59) overlaps more than one device region.

Further, the Examiner's position, set forth in the Advisory Action of January 30, 2004, that the side walls of Hodate et al. meet the above highlighted claim limitations when the "side walls" of Hodate et al. are viewed as being part of the gate structure is not understood. That is, the instant claim 32 (for example) sets forth the features:

a pair of side walls (312, 313) adjacent to side surfaces of the gate electrode (306, 307);

an insulating film (322) on the gate electrode and the pair of side walls;

a pair of first impurity regions (308, 309) doped with an N-type impurity at a first concentration and formed in the semiconductor film with the channel forming region extending therebetween

wherein the pair of side walls only overlap the pair of first impurity regions (Figure 3C)...(Indicia/emphasis added)

The Examiner's interpretation the "side wall" of Hodate et al. would not make sense in light of claimed feature above, i.e., both the "side walls" and the "side surfaces" of the gate structure are the same thing (in the Examiner's interpretation). Therefore, each particular side wall could not be "adjacent" itself, i.e., the side surface, in the context of exemplary claim 32. Consequently, even if interpreted as asserted by the Examiner in the Advisory Action, the teachings of Hodate would not meet the "adjacent" feature of the claims.

Since Hodate et al does not (explicitly or implicitly) teach each and every feature of the claimed invention, the rejection of claims 32-36, 38-41, 44-48 and 50-54, under §102(b), is improper and must be withdrawn.

For the reasons set forth in the Amendment of July 14, 2003, the Shanks et al reference does not cure the deficiencies noted above for Hodate et al., and, therefore, the proposed combination of teachings of Hodate et al and Shanks et al does not set forth a *prima facie* case of obviousness. Consequently, the rejection of claims 37, 43, 49 and 55, under §103(a), must also be withdrawn.

With regard to the rejection C. above, a proper terminal disclaimer will be filed when the other (A. & B.) rejections of record have been indicated as withdrawn and the claims otherwise indicated as allowable.

Having responded to all rejections set forth in the outstanding final Office Action and Advisory Action, it is submitted that claims 32-55 are in condition for allowance. An early and favorable Notice of Allowance is respectfully solicited. In the event that the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, the Examiner is courteously requested to contact Applicants' undersigned representative.

Lastly, it is noted that a separate Extension of Time Petition (four months) accompanies this response along with an authorization to charge the requisite fee to Deposit Account 19-2380 (740756-2063). However, should that petition

become separated from this Amendment, then this Amendment should be construed as containing such a petition. Likewise, any overage or shortage in the required payment should be applied to Deposit Account No. 19-2380 (740756-2063).

Respectfully submitted,

By


Jeffrey L. Costellia
Registration No. 35,483

NIXON PEABODY LLP
401 9th Street, N.W., Suite 900
Washington, DC 20004-2128

(202) 585-8000
(202) 585-8080 fax